

THE CHARACTERISTIC OF ERECTILE DYSFUNCTION AMONG TYPE 2 DIABETES MELLITUS MALE IN EASTERN INDONESIA

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ABSTRACT

Objective: To determine Type-2 diabetic patients and its characteristics to determined risk of Erectile dysfunction (ED) and the role of EHS score as more practical tools to screening ED among T2DM patients. **Material & Methods:** The cross-sectional observational study was carried out at the Internal medicine Unit of Manambai Abdulkadir and Dompu district Hospital, out of 45 patients were included on this study. The data were collected from June 01 – August 01 2017. A structural questionnaire was used to collect the data and was analyzed using SPSS 2.0. person analysis correlation and logistic regression were used to find the Odds Ratio (OR). **Results:** We found that 38 out of 45 (84.4%) patients (mean age 57.2 ± 7.1) have Erectile dysfunction, 26 patients uncontrolled diabetes, 5 (11.1%) treated as CHF, 4 (8.9%) CKD, and 7 (15.6%) neuropathy diabetic. There is high correlation between random glucose level and IIEF-5 score ($r=0.5$, $p=0.01$). The overall odd ratio of ED in this studies was 4.3 (95% CI: 0.73 to 25.1) for uncontrolled diabetes, 2.5 (95% CI: 0.1 to 51.1) for Treated CHF, 2 (95% CI: 0.01 to 41.6) for CKD, and it was 1.2 (95% CI: 0.1 to 11.5) for neuropathy diabetics. **Conclusion:** From this study, we found that most diabetic patients have ED, and there is high correlation between random glucose level and simplified IIEF-5 score, EHS performed similar result on diagnoses ED compared to IIEF-5.

Keywords: Erectile dysfunction, diabetes mellitus, IIEF-5, EHS.

ABSTRAK

Tujuan: Menentukan pasien diabetes tipe-2 dan karakteristiknya untuk menentukan risiko disfungsi ereksi (ED) dan peran skor EHS sebagai alat yang lebih praktis untuk skrining ED di antara pasien T2DM. **Bahan & Cara:** Penelitian observasional penampang melintang dilakukan di Unit Penyakit Dalam Manambai Abdulkadir dan RSUD Dompu, 45 pasien diikutsertakan dalam penelitian ini. Pengumpulan data dilakukan dari 01 Juni - 01 Agustus 2017. Pengumpulan data menggunakan kuesioner struktural dan dianalisis menggunakan SPSS 2.0. Korelasi analisis pasien dan regresi logistik digunakan untuk mencari Odds Ratio (OR). **Hasil:** Kami menemukan bahwa 38 dari 45 (84.4%) pasien (usia rerata 57.2 ± 7.1) mengalami disfungsi ereksi, 26 pasien diabetes yang tidak terkontrol, 5 (11.1%) dirawat sebagai CHF, 4 (8.9%) CKD, dan 7 (15.6%) neuropati diabetes. Ada korelasi tinggi antara kadar glukosa acak dan skor IIEF-5 ($r=0.5$, $p=0.01$). Rasio ganjil keseluruhan ED dalam penelitian ini adalah 4.3 (95% CI: 0.73 hingga 25.1) untuk diabetes yang tidak terkontrol, 2.5 (95% CI: 0.1 hingga 51.1) untuk CHF yang diobati, 2 (95% CI: 0.01 hingga 41.6) untuk CKD, dan 1.2 (95% CI: 0.1 sampai 11.5) untuk penderita diabetes neuropati. **Simpulan:** Dari penelitian ini kami menemukan bahwa sebagian besar pasien diabetes mengalami ED dan terdapat korelasi yang tinggi antara kadar glukosa acak dan skor IIEF-5 yang disederhanakan, EHS menunjukkan hasil yang serupa pada diagnosis ED dibandingkan dengan IIEF-5.

Kata Kunci: Disfungsi ereksi, diabetes mellitus, IIEF-5, EHS.

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INTRODUCTION

Type 2 Diabetes mellitus (T2DM) widely known as global burden, estimated around 108

million adults were living with Diabetes in 1980 and the number is expected to keep rising from quadruple to 422 million in 2014. Diabetes mellitus is associated with 10 to 30% decrease in life

expectancy mainly due to its complications associated, poor awareness regarding the disease, and inadequate glycemic control.¹⁻³ Inadequate glycemic control has been known as one of the major factor that leads to the abnormality of neurovascular caused erectile dysfunction (ED).³⁻⁷ A survey study found that ED more common in patients with DM, with the advancement of age and chronicity of diseases, the severity of ED observed increase; early diagnosis and management may improve the outcome both DM and ED.^{3,8,9}

Although ED is not usually perceived as a life-threatening condition, it's strongly associated with both physical and psychosocial health, hence it determine Quality of life. ED is defined as the persistent inability to maintain a sufficient erection for sexual performances.¹⁰ On diagnosis, concurrent medical, psychiatric, and surgical history should be recorded, as well as relationship status, numerous questionnaires have been validated, International Index of Erectile Function (IIEF), simplified International Index of Erectile Function (IIEF-5), The International Prostate Symptom Score (IPSS) and aging male symptom score has been used to assess sexual domains, IIEF-5 as simpler version of IIEF has been advocated as tools on screening ED on multidimensional approached. but its application may less effective as screening setting on primary health center, thus more simple and applicable tools are needed as screening tools in primary setting.

OBJECTIVE

To determine Type-2 diabetic patients and its characteristics to the determined risk of Erectile dysfunction (ED) and the role of EHS score as more practical tools for screening ED among T2DM patients.

MATERIAL & METHODS

The cross-sectional observational study was conducted at Manambai district hospital and Dompur district hospital; all samples were collected on outpatient in the internal medicine department. All male patients diagnosed T2DM was included. Patients with history spinal cord injury, stroke, Parkinson's diseases, prostate surgery, cancer, and the major psychiatric problem was excluded on this study. And blood sampled was taken on both hospital laboratory and its classification was using national algorithm that adopted from American Diabetes

Associations (ADA) guidelines.

Forty-five consecutive males whom favorable inclusion and exclusion criteria were enrolled; the blood venous sample was taken in the outpatient department after interviews were conducted. The cut point of regulated DM has used ADA guidelines and current national guidelines that indicated 200 mg/dl as regulated DM. Data were analyzed using SPSS 24.0. Pearson analysis correlation and Odds Ratio (OR) were used to assess the risk of ED.

RESULTS

A total of 45 men completed the questionnaire and their clinical characteristics were noted (Table 1).

Overall, 39 (84.4%) and 38 (80.9%) of T2DM patients had ED that was defined by IIEF-5 and EHS respectively, and the majority of patients had mild ED (15) (table 1). the duration of DM is approximately 3.89 years. Among 45 patients who had T2DM, 26 (57.8%) of them was unregulated glucose index.

There is high correlation between random glucose level and IIEF-5 score ($r=0.5$, $p=0.01$). The overall odds ratio of ED in this studies was 4.3

Table 1. The baseline of demographics patients.

Baseline characteristics	
Age	57.38 (± 7.22)
Erectile Dysfunction Defined by IIEF-5	39 (83%)
• Mild	15 (33%)
• Mild-moderate	9 (20%)
• Moderate	8 (18%)
• Sever	7 (16%)
Erectile Dysfunction Defined EHS	38 (80.9%)
Duration of Diabetes mellitus	3.89 (3.6)
Status of diabetes	
• Regulated	19 (42.2%)
• Unregulated	26 (57.8%)
CKD	4 (8.9%)
CHF	5 (11.1%)
Neuropathy	7 (15.6%)
Hypertension	15 (33.3%)
• Regulated	8 (17.7%)
• Unregulated	7 (15.6%)

EHS : erectile hardness score, CKD : Chronic Kidney Diseases, CHF: Congestive Heart Diseases.

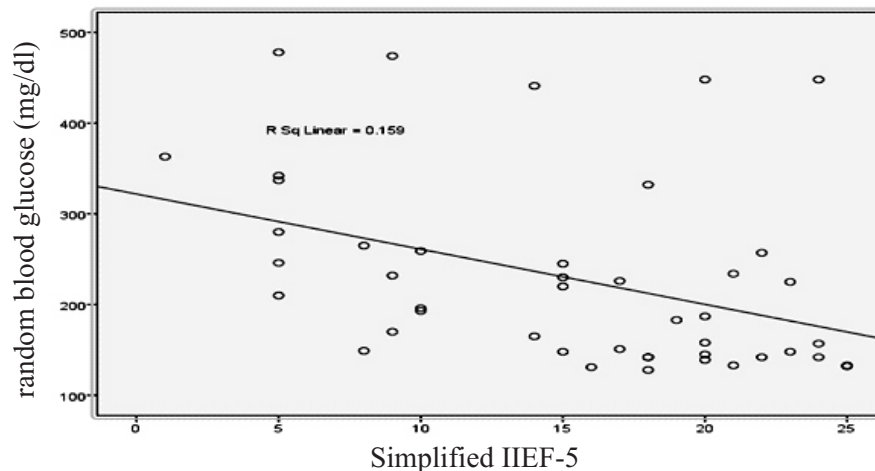


Figure 1. Pearson correlation is shown there's inverse correlation between random glucose level and Simplified IIEF-5 score ($r=-.399$, $P=0.007$).

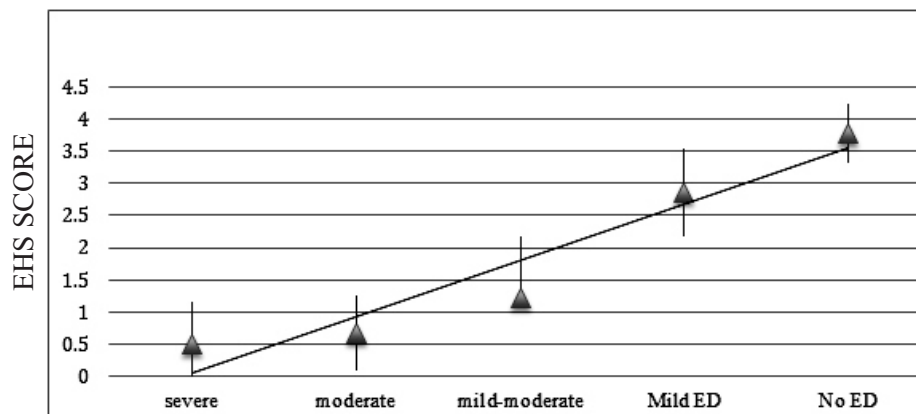


Figure 2. Correlation of EHS and severity of ED defined by IIEF-5 (Spearman rho 0.91, $P<0.001$).

(95% CI: 0.73 to 25.1) for uncontrolled diabetes, 2.5 (95% CI: 0.1 to 51.1) for Treated CHF, 2 (95% CI: 0.01 to 41.6) for CKD, and it was 1.2 (95% CI: 0.1 to 11.5) for neuropathy diabetics.

In this study, we found that EHS and IIEF-5 also demonstrated similar results on Diagnose ED, both of them found has strong correlation on diagnose ED regarding its prevalence and also severities (Figure 2, Spearman rho 0.91, $P<0.001$).

DISCUSSION

On this study, 39 of the 45 patients had ED in all degree of ED, which is shown that ED was majority complications; Ibrar et al. also found similar prevalence, approximately 97.2% T2DM patients has ED disregard its severity.⁹ ED has been endorsed as one of the negative predictors of poor

quality of life in men with T2DM due negatively affect male self-esteem, depression, and anxiety; hence actively screening ED among T2DM patients is needed not only to diagnose and treat's ED but also improve quality of life T2DM patients.¹¹⁻¹³

Glycemic control correlates with the development of ED and furthers complications of T2DM; tight glycemic control has been advocated for decades, despite being campaigned poor glycemic control remains found in wide population, on this study we found that the majority of patients (57.8%) still have unregulated glycemic blood level. Significant Inverse correlation between Blood glycemic level and severity of ED also demonstrated in this study, this data suggests that poor glycemic controls worsen the severity of ED, several studies support this finding¹⁴⁻¹⁹, whereas other studies did not report any correlation.²⁰⁻²¹ This finding may vary due

to the chronicity of T2DM, time of diagnosis, hypertension, hyperlipidemia, overweight and obesity, metabolic syndrome, smoking, sedentary lifestyles, and autonomic neuropathy, which are recognized as risk factors for ED that found different on the baseline of each studies.²¹⁻²⁴

EHS has been known as tools on evaluation of the management of ED, it's only assessing dimensions of erection hardness, and IIEF-5 one advances tools that assessed 5 dimensions of ED. But both tools performed similar results on the diagnosed disregard of its etiology, EHS showed similar grading severity of ED compared IIEF-5, EHS has high correlation with IIEF-5 on diagnosing the severity of ED (Figure 2, Spearman rho 0.91, $P < 0.001$); hence it may indicate that EHS can be simple tools that used on screening and diagnosing ED in primary setting. Another study in Taiwan also shown similar results, both EHS and IIEF-5 have high correlation with both sexual and marital satisfaction.²⁵

Therefore EHS can be endorsed as simple, practical tool and clinical use on high-load patients setting, while ED classifies as one of common problem among man, and its prevalence is increase along with aging, initiating timely and effective treatment are necessary.

In term of limitation, our cross-sectional study conduct in relatively small number of subjects. The major strength of our study is performed strong data maybe need to be studied in larger subjects.

CONCLUSION

This study failed to shown characteristics of diabetes and it's comorbid as the risk of ED, the small number of samples due to our strict exclusion criteria is one of the major causes. Healthcare Professionals should be encouraged to initiate an open dialogue of sexual issues to identify men with ED who may not otherwise volunteer their sexual concerns. Tight glycemic is important to prevent the worsening of ED. EHS score is applicable in any clinical setting and easier to conduct.

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